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Parthenogenetic and Sexual Phases in the Life Cycle of *Hydatina senta*."

Franz Boas: "The Influence of Heredity and of the Environment on Man."

C. W. Beebe: "Racket Formation in the Tail Feathers of the Mot-mot."

Most of the papers will be illustrated by actual specimens or other demonstrations and time will be allowed for discussion. The society will probably meet in two sessions, morning and afternoon.

The Naturalists' dinner will be held on the evening of Wednesday, December 29, when the address of the president, Professor T. H. Morgan, will be delivered on "Chance or Purpose in the Evolution of Adaptations."

As previously, members of the special societies devoted to biological sciences are invited to attend the dinner of the naturalists.

Those expecting to attend the dinner will greatly oblige the committee in charge, if they will notify Dr. R. P. Bigelow, Massachusetts Institute of Technology, Boston, Mass., at the earliest opportunity.

H. McE. KNOWER,
Secretary

SCIENTIFIC NOTES AND NEWS

THE Nobel prizes for the present year have been awarded as follows:

For Physics—Divided between Mr. Guglielmo Marconi and Professor Ferdinand Braun, of Strassburg.

For Chemistry—Professor Wilhelm Ostwald, of Leipzig.

For Physiology or Medicine—Professor Theodor Kocher, of Berne.

For Literature—Selma Langerlof, the Swedish authoress.

For the Promotion of Peace—Baron D'Estournelles de Constant, president of the French parliamentary group for international arbitration, and M. Beernaert, former Minister of State of Belgium.

THE address of the retiring president of the American Association for the Advancement of Science, Professor T. C. Chamberlin, of the University of Chicago, will be given in Sanders Theater, Harvard University, on Monday evening, December 27, and will be followed by a reception in Memorial Hall.

DR. MAX VERWORN, professor of physiology in the University of Göttingen, will be the next Silliman lecturer at Yale University.

THE medical faculty of the University of Budapest has offered the chair of experimental biology to Professor Jacques Loeb, of the University of California. Professor Loeb lectured before the International Medical Congress at Budapest last September and delivered a course of lectures at the University of Budapest in June.

MR. FRANCIS DARWIN, F.R.S., has been made doctor of the University of Brussels and a corresponding member of the Institut National of Geneva.

A COMMITTEE has been formed at Cambridge to present a portrait to Mr. A. E. Shipley, F.R.S., lecturer in natural science at Christ's College and university reader in zoology.

THE American Institute of Electrical Engineers has appointed Professor A. E. Kennelly, of Harvard University, president of the United States national committee of the international electrotechnical commission.

THE Royal Meteorological Society has awarded the Symons gold medal to Dr. W. N. Shaw, F.R.S., in recognition of his work for meteorology.

SINCE the return of the DeMilhau Peabody Museum South American Expedition, Dr. William C. Farabee has received from the *Universidad Mayor de San Marcos de Lima* a diploma as honorary member of the faculty of sciences in the university, for "scientific merits and important services rendered to the government of Peru." Besides the formal communication from the university, a personal letter from the president of the republic accompanied the diploma.

MAJOR CHARLES E. WOODRUFF, of the medical corps of the U. S. A., has been detailed as the medical officer in charge on the Island of Corregidor, at the mouth of Manila Bay, where extensive fortification construction is being done.

DR. WALTER LEHMAN, of the Royal Ethnographical Museum, of Berlin, has returned from an expedition to Central America and

Mexico and is at present working in the museums of this country.

At the meeting of the American Philosophical Society on December 17, the annual address of the president will be given by Dr. William W. Keen, and a historical paper will be presented by Dr. Eduard Meyer, professor of ancient history in the University of Berlin.

THE annual public address under the auspices of the Entomological Society of America will be given this year, on the evening of Thursday, December 30, by Dr. John B. Smith. The title is "Insects and Entomologists: their Relation to the Community at Large." Members of the American Association and of the affiliated societies and the public in general are cordially invited to attend.

DR. L. A. BAUER gave an illustrated address at the annual meeting of the Washington Society of Engineers on December 7, on "The Non-magnetic Yacht *Carnegie* and her Producer Gas Engine."

ON Friday, December 3, Professor J. A. Holmes, of the U. S. Geological Survey, lectured before the students of the College of the City of New York on "Explosions in Coal Mines."

THE Huxley lecture at Birmingham University was delivered on December 1 by Professor W. Bateson, F.R.S., his subject being "Mendelian Heredity."

WE learn from *Nature* that the meeting of the Royal Irish Academy on November 30 was occupied by a commemoration of Charles Darwin, the date nearly coinciding with that of the publication of "The Origin of Species" fifty years before. The president, Dr. F. Tarleton, opened the proceedings, and the following short addresses were given on the influence of Darwin's work: Geology, Professor G. A. J. Cole; geographical distribution of animals and plants, Dr. R. F. Scharff; zoology, Professor G. H. Carpenter; botany, Professor T. Johnson; anthropology, Professor A. F. Dixon.

THE collection of lichens formed by the late Clara E. Cummings, Hunnewell professor of cryptogamic botany at Wellesley

College, has been bought by the college and will be installed in the department of botany as a memorial to Professor Cummings.

By subscription a fund has been created in honor of Dr. Christian Fenger, of Chicago, who died in 1902. The fund is to be known as the Fenger Memorial Fund and the income is to be used to promote medical investigation. The directors of the Fenger Memorial Association have set aside \$400 for this purpose for 1910. Applications with the necessary details should reach the secretary, Dr. L. Hektoen, 1743 W. Harrison Street, Chicago, not later than February 1, 1910.

A SCHOLARSHIP in engineering at the University of Pennsylvania has been founded by Mrs. S. W. Carlton, Jr., in memory of her father, the late Dr. Coleman Sellers, the eminent engineer.

DR. JEAN BINOT, head of the department of pathological anatomy of the Pasteur Institute, Paris, died at the end of November.

THE new administration building of the Carnegie Institution of Washington, situated at Sixteenth and P Streets, will be open to the public for inspection on Wednesday, Thursday and Friday, December 15, 16 and 17, from 2 to 5.30 P.M. Opportunity will also be offered to view an exhibit of the work of the institution and its departments.

SECTION B, of the American Association and the American Physical Society, will meet on Tuesday, December 28, in the Lowell (new) Lecture Hall, Cambridge, where the vice-presidential address will also be given on Tuesday afternoon. The Wednesday, Thursday and Friday sessions of Section B and the American Physical Society will be held at the Institute of Technology, as previously announced. Dr. L. A. Bauer, chairman of the section, has addressed to physicists the following letter:

It gives me much pleasure to announce that, judging from present indications, our coming meeting at Boston will be a success. Titles of papers have already been received from eminent physicists, among them Michelson and Runge, of Göttingen.

For one reason or another some of our foremost

investigators have not always attended the American Association for the Advancement of Science meetings and have, in fact, been known to speak disparagingly of them. However, it should be remembered that it lies within our own power to make the meetings just what we want them to be. I, for one, believe that we have sufficient talent on this continent to make our gatherings as successful as the recent one of the British Association for the Advancement of Science at Winnipeg.

If you have an important contribution to make let me urge you to forward immediately the title and abstract to one of the secretaries and above all to lend encouragement by your presence. It is hoped that our meeting will be truly one of "general consultation, a focal point for condensed opinions, for authoritative statements, for criticism from varied standpoints," as also of friendly intercourse among sympathetic workers.

If you are not already a member of the American Association for the Advancement of Science it behooves you to become so at the earliest possible date.

"I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto."—*Francis Bacon*.

THE department of plant pathology of the New York State College of Agriculture, at Cornell University, announces the establishment of a second temporary industrial fellowship. This fellowship, which is known as the C. W. Stuart & Company Fellowship has been established by C. W. Stuart & Company, nurserymen, of Newark, N. Y. The purpose of this fellowship is the investigation of the diseases of nursery stock with particular reference to the fire blight or pear blight disease. This fellowship carries an annual salary of \$500 per year and \$250 per year for carrying on the work and is to continue for two years. Mr. V. B. Stewart, A.B. (Wabash, '09), has been appointed fellow. He spent the summer of 1909 in one of the nurseries of this company.

MR. ZACCHEUS DANIEL, Thaw fellow in astronomy at Princeton University, discovered a new comet on December 6, while working in the Prospect Avenue Observatory. It is of about the ninth magnitude, the nucleus being of about the thirteenth magnitude. The posi-

tion was Dec. 7.8759 Greenwich meantime, R. A. $6^h 16^m 44^s.0$, Dec. $+34^\circ 55' 15''$.

THE Astronomical and Astrophysical Society of America through its Comet Committee is soliciting cooperation in the observation of Halley's comet at its approaching return, and has prepared a circular letter of advice with regard to such observations that has been widely distributed among observatories. A copy of this circular will be mailed to any astronomer who may desire to use it, upon request being made to the chairman of the committee, Professor G. C. Comstock, Washburn Observatory, Madison, Wisconsin. Among the matters treated in the circular are: Photographing Comets by Professor Barnard, Spectroscopic Observations by Professor Frost, Photometric Observations by Professor E. C. Pickering, etc. It is the purpose of the Comet Committee to collate as far as possible the photographic results obtained and for that purpose it would be pleased to receive copies (positives on glass) of photographs of the comet from all parts of the world. This wide distribution of photographic observations is regarded as a matter of prime importance and in order to obtain them where they would otherwise be lacking, in the broad expanse covered by the Pacific Ocean, the committee, aided by a grant from the National Academy of Science, at Washington, is preparing to send out to the Hawaiian Islands an expedition that will have as its sole purpose the photographing of the comet during the months of its greatest brilliancy, March to June, 1910.

THE following scientific papers have been given during the months of October and November at the meetings of the University of Colorado Scientific Society: "The Darwin Celebration, Cambridge," Professor T. D. A. Cockerell; "Comets; with special reference to Halley's Comet and its approaching return," Professor Oliver C. Lester; "Forests and Stream Flow," Professor Clement C. Williams; "Rabies," Dr. A. R. Peebles; "The Conservation of Human Life—More important than that of Forests, Waters, Soil or Minerals," Professor Francis Ramaley.

THE annual joint meeting of the Iowa Society of the Archeological Institute of America, the Iowa Anthropological Society and the Iowa branch of the American Folk-Lore Society, was held at the State University of Iowa, November 26 and 27. At the opening session on Friday afternoon, a greeting was extended to the visitors by President George E. MacLean, of the university, which was responded to by State Librarian Johnson Brigham, of Des Moines. Papers on many subjects of interest were presented, among them a report on the Boone Mounds in Iowa by Curator Harlan, of the state historical department; a discussion of the human population of the Hawaiian Islands by Professor Charles C. Nutting, of the State University of Iowa, and a lecture by Mrs. A. M. Mosher, of Cambridge, Mass., entitled "The Story of the Isle of Man." Officers of the societies elected for the coming year are the following:

Iowa Society of the Archeological Institute:

President—E. K. Putnam, of Davenport, Iowa.

Secretary-Treasurer—Professor Charles H. Weller, of the State University of Iowa.

Iowa Anthropological Society:

President—E. K. Putnam, of Davenport, Iowa.

Secretary—J. H. Paarmann, of Davenport, Iowa.

Iowa Branch of the American Folk-lore Society:

President—Charles B. Wilson, of the State University of Iowa.

Secretary—E. K. Putnam, of Davenport, Iowa.

THE regular monthly meeting of the Oregon State Academy of Sciences was held on October 16, the speakers being Dr. David Walker and Dr. L. J. Wolf, on "Arctic Explorations." Dr. Walker had been on two expeditions, the first with McClintock, and Dr. Wolf has been with Peary in 1905-6. Dr. Walker gave an account of early explorations and Dr. Wolf of his own experiences.

THE United States Commissioner of Education, Dr. E. E. Brown, has announced that at the request of the Belgian government he has appointed an American committee to have charge of American interests at the third International Congress of Home Education to be held in Brussels in 1910. The membership of the American committee is Professor M. V. O'Shea, the University of Wisconsin, chair-

man; Professor W. C. Bagley, the University of Illinois, secretary; President Wm. L. Bryan, the University of Indiana; Mr. Wm. H. Allen, expert for the Sage Foundation, New York; Professor Irving Fisher, Yale University, chairman of the Committee of One Hundred; Judge Ben B. Lindsey, Denver; Superintendent Frank B. Cooper, Seattle; Mary E. Ahern, editor Public Libraries, Chicago; President E. R. Johnstone, New Jersey; President Lewis H. Jones, State Normal College, Michigan; Charlotte Perkins Gilman, editor, New York; Mrs. H. K. Schoff, president of the National Congress of Mothers, Philadelphia; Dean W. S. Sutton, University of Texas; Professor Henry Suzzalo, Columbia University; Bertha Payne Miller, the University of Chicago.

THE International Congress of Mining, Metallurgy, Applied Mechanics and Practical Geology, held at Liège in 1905, resolved to accept the invitation of the Rhenish-Westphalian Mining Industry to hold the next congress in Rhenish-Westphalia, and it is now announced that the congress will be convened at Düsseldorf, the last week in June, 1910. It will be divided into the following sections: (1) Mining, (2) Metallurgy, (3) Applied Mechanics, (4) Practical Geology.

ONE of the most widely known of the rarer metals is tungsten. The production of this metal in the United States, however, is not large, as a little of it goes a long way for some of its most important uses. As by far the largest part of the tungsten produced is used in making tool steel, the demand for tungsten decreased greatly during the recent depression in the steel industry. In 1908 the domestic production of tungsten ore, reduced to an equivalent of ore carrying 60 per cent. of tungstic trioxide (WO_3), the ordinary commercial basis in the United States, was 671 short tons, valued at \$229,955, as against 1,640 tons, valued at \$890,048, in 1907. The statistics at present available from foreign countries show a similar decline. These figures are taken from a report by F. L. Hess, of the United States Geological Survey, published in an advance chapter from "Mineral

resources of the United States, calendar year 1908." Mr. Hess gives also details of the industry by states, notes on the occurrence and uses of tungsten, and a partial bibliography. Tungsten is of wide occurrence, but the individual deposits can hardly be said to be large. As a rule they are "pockety"—that is, they occur in lenticular masses or small shoots. Many of those at the surface are quickly and easily mined, but it may then take all the profits derived from the first ore body to locate another one. The tungsten minerals used as ores are hübnerite, a tungstate of manganese; wolframite, a tungstate of manganese and iron; ferberite, a tungstate of iron; and scheelite, a tungsten of calcium. They generally occur in veins cutting igneous rocks that contain much silica, such as granite and granodiorite. Some simple tests for identifying these minerals are described by Mr. Hess. The most important use of tungsten is as an alloy for tool steel, to which it imparts the property of holding temper at a much higher temperature than high-carbon steels. When lathe tools are made of tungsten steel the lathe may be speeded up until the chips leaving the tool are so hot that they turn blue. It is said that about five times as much work can be done by a lathe built for such speeds and work and fitted with tungsten-steel tools as can be done by the same lathe with carbon-steel tools. From 16 to 20 per cent. of tungsten is ordinarily used in lathe tools.

THE *Journal* of the American Medical Association states that the production of radium has been carried on in Johannistal to such a degree that at present there is available a quantity equivalent to 1 gm. (15 grains) of the pure substance. Several tons of the ore had to be worked up before an appreciable amount was obtained. It is intended now to put the available quantity on the market solely for scientific purposes and for charitable institutions. It will be sold in quantities of 1 mg. (about $\frac{1}{60}$ grain) of the 5 per cent. and the 10 per cent. salt. Bromid of radium has been chosen. The price of the 5 per cent. salt will be 1,080 crowns (\$244) per portion ($\frac{1}{60}$ grain). The sale will take place in the radium institute just now in course of erection. A gift

by an anonymous benefactor, who gave \$100,000 for this purpose on the understanding that an equal sum should be provided by the state, enabled the Vienna University to obtain its radium research institute, the first in the world as regards equipment for investigators. The necessary appropriation having been voted, the building is now almost ready for use.

UNIVERSITY AND EDUCATIONAL NEWS

THE *Chicago Record-Herald* says: "Plans are in contemplation for giving the University of Chicago the finest physical laboratory in the United States, if not in the world. It is said that before all the plans are consummated the plant will have cost \$1,000,000. All of the money is to be furnished by Martin Ryerson, president of the board of trustees of the university, who also was the donor of the present Ryerson laboratory at the university."

MR. SAMUEL MATHER, of Cleveland, and his children, have offered to erect for the College for Women of Western Reserve University, a building for class and lecture rooms, in memory of Mrs. Florence Stone Mather.

THE contract for the new chemistry building of Rutgers College has been awarded. The building will be located about 100 feet north of the engineering building which was completed last year. It will be built of brick with terra cotta trim and will conform architecturally to the engineering building. On the first floor will be a large lecture room seating about 200, and three class rooms, two seating about 50 students and one for 30 students. On the second floor will be the qualitative laboratory for 96 students, the quantitative laboratory for 64 students, a laboratory for work in electrochemistry and one for water analysis, professors' private offices and laboratories and a supply room. In the basement is the laboratory for the elementary work of freshman year which will accommodate 162 men, a laboratory for organic chemistry accommodating 24 men and the necessary heating and ventilating apparatus and a stock room.

THE annual meeting of the Association of American Universities will be held at the University of Wisconsin, January 4 and 5.